

"APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0 接受存在业分级;在这边的形态里的变形的自身完全有压力的。

Grabner, C.

Czechoslovakia/Physical Chemistry - Surface Phenomena. Adsorption. Chromatography.

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 595

Author: Dvorak, J., and Grubner, O.

Institution: None

Title: Countercurrent Electrophoresis on Paper. III. Longitudinal Flow of

Liquid Through the Paper with the Current Shut Off

Periodical: Chem. listy, 1956, Vol 50, No 1, 36-42

Abstract: In their investigation of the factors which affect the distribution of the components separated by countercurrent electrophoresis on paper,

the authors have studied the velocity of flow of liquids along strips of chromatographic paper, i.e., the so-called "longitudinal flow

velocity" U, for which they confirmed the Kozeni-Karmani equation. The authors have measured the value of U for various slopes and for different paper strip lengths, taking into account the effect of evapo-

ration. The liquid content of the various paper sections was

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CIA-RDP86-00513R000617110014-0" APPROVED FOR RELEASE: 08/10/2001

Czechoslovakia/Physical Chemistry - Surface Phenomena. Adsorption. Chromatography. Ion Exchange, B-13

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 595

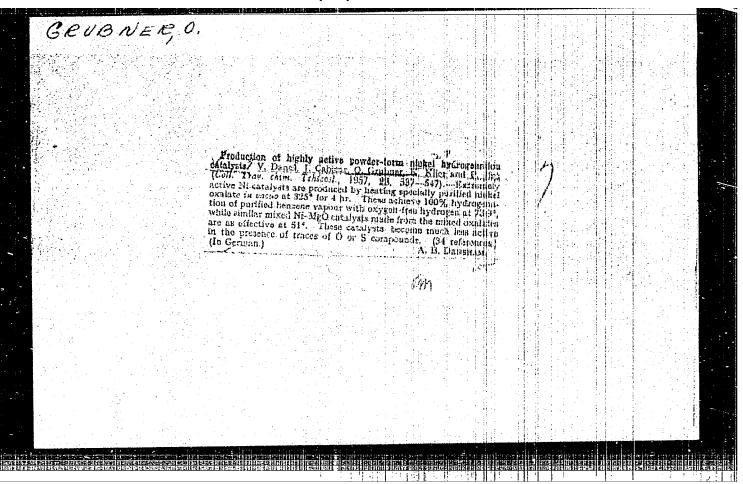
Khimiya, 1956, 75470.

MOUD ALTO A

Abstract: determined by freezing the latter in liquid air and weighing. The linear flow rate at different points on the paper was determined from the displacement of the boundary of radioactive $\text{Hi}_3P^{32}\text{O}_{l_4}$. It has been established that this flow rate depends mainly on the evaporation. Values for the characteristics of wet and dry Whatman No 4 paper are presented in a table. Among the data included are values for the thickness, total volume, density, porosity, surface area (determined by nitrogen adsorption), the Kozeni constant, and the number and radius of the pores. For communication II see Referat Zhur -

Card 2/2

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Z/009/60/000/011/001/001 E112/E153

AUTHORS:

Dolejšek, Z, Grubner, O, Hanuš, V, Kössler, I,

Matyska, B, and Vodehnal, J.

TITLE: Analytical Control of Isoprene Rectification

PERIODICAL: Chemický průmysl, 1960, No. 11, pp. 571 - 575

TEXT: For the stereoscopic polymerization of isoprene, monomers of sufficiently high quality are essential. Purification of isoprene on a large scale is carried out by distillation processes. Technical isoprene contains various saturated and unsaturated hydrocarbons with 4, 5 or 6 carbons. Separation is accomplished by azeotropic distillation, adding acetaldehyde, propylene oxide, methyl formate, methanol, isopentane, propylene oxide, methyl formate, methanol, isopentane, isopropylamine, acetone, water or aqueous acetone as azeotropic agent. As the literature does not contain sufficient data about the boiling points of the different mixtures the authors have undertaken a study of the normal rectification of isoprene on efficient columns and have followed the concentrations of the different components in the various cuts. The effect of water and methyl alcohol as azeotropic agents was also considered.

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Analytical Control of Isoprene Rectification

Two types of isoprene from different sources were investigated: 1) Soviet material, with 96% isoprene content, and 2) Czechoslovak material, prepared from isobutylene and formaldehyde, with 13% isoprene. The different distillation fractions were analysed by mass spectrography, infrared spectroscopy and gas chromatography, using thermoconductivity cells for detection. chromatogram of sample B (Czechoslovak), e.g. first sample of condensate from still-head is shown (Fig.1), revealing 8 peaks and identified as follows: 1) isobutylene, not isolated in pure state but found in one fraction in an amount of 15% together with 85% 3-methylbutene-1; 2) and 3), peaks appertaining to butene-1 and butene-2 (confirmation of structure through mass spectrography); 4) 3-methylbutene-1 (this compound was isolated from one fraction in 99.5 purity and identified spectroscopically by comparison with data in the literature; 5) 2-methylbutene-1 (this compound was identified by comparison with literature data. It was obtained by fractional distillation in approximately 80% purity. It was also obtained by preparative Card 2/6

Z/009/60/000/011/001/001 E112/E153

Analytical Control of Isoprene Rectification

gas chromatography, and both samples proved identical); 6) isoprene: standard prepared by fractional distillation in 99.98% purity and by preparative chromatographic method (ethyl cyclopentanecarboxylate as stationary phase); 7) 2-methylbutene-2 prepared by fractional distillation in 98% purity (identified by method used for 3-methylbutene-1; compound prepared for identification purpose also by preparative gas chromatography). Chromatogram of sample A (Soviet isoprene) revealed similar A special peak (4b) was noticed, the identity characteristics. of which was not yet determined. Results of practical Sample A was distilled over distillation tests were as follows. a low-efficiency column with reflux ratio 13:1. Pentene contents were reduced from 4 to 1.2%, and isoprene of 98.8% purity and in yields of 80% was collected. Using a more efficient column with reflux ratio 40:1 equilibrium was established after 2 hours and isoprene of 99.98% purity was obtained in poor yields. Attempts to improve yields by the addition of azeotropic agents (methanol, water) failed. Distillation of sample B was undertaken Card 3/6

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over a column with reflux ratio 4:1. The concentration of isoprene in the middle fraction was doubled and the distillate contained only four components: 3-methylbutene-1; butene-1; isoprene; 2-methylbutene-2. A further fractionation over a column with reflux ratio 25:1 yielded further fraction, from which only those containing 2-methylbutene-1, isoprene and 2-methylbutene-2 were collected. Distillation of the three combined fractions over a column with reflux ratio 40:1 gave a two-component mixture in which the pentene concentration amounted to only 13%. By azeotropic distillation with acetone, conversion into high-grade isoprene could be achieved. claimed that yields were satisfactory. Acknowledgements are made to Doctor J. Pech, director, VUSK Gottwaldov for useful advice and for supplying some of the raw materials. There are 6 figures, 4 tables and 16 references (including several patents to one reference): 11 English, 4 Czech and 1 Soviet. Ústav fyzikální chemie ČSAV, Praha (Institute for ASSOCIATION: Card 4/6 Physical Chemistry, ČSAV Prague) SUBMITTED: June 6, 1960

GRUBNER, O.

Contribution to the analysis of the structure of powder-forming substances using the flow of gases. Coll Cz Chem 25 no.1:180-193 Ja *60. (EEAI 9:12)

 Institut fur physikalische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag. (Porosity) (Gas flow)

VACIK, J.; GRUBNER, O.; DVORAK, J.

Countercurrent electrophoresis on paper. V. Geometrical structure of chromatographic paper. Coll Cz chem 25 no.3:625-635 Mr '60.

(EEAI 9:12)

1. Institut fur physikalische Chemie, Karlsuniversitat, Prag, und

1. Institut fur physikalische Chemie, Karlsuniversität, Frag, Institut fur physikalische Chemie, Tschechoslovakische Akademie der Wissenschaften, Prag.

(Electrophoresis) (Chromatography)

Z/009/61/000/002/002/008 E112/E453

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AUTHORS: Grubner, O. and Benesová, V.

TITLE: Apparatus for Determining Surface Areas of Powdered

Substances From Gas Absorption Data

PERIODICAL: Chemický průmysl, 1961, No.2, pp.71-73

Calculating surface areas from absorption data depends on the correct interpretation of absorption isotherms. To determine the volume (V_m) of a unimolecular layer on an absorbent with accuracy presents difficulties. It is equally difficult to measure exactly the surface areas of the absorbed molecules. surface areas of the latter are, generally, calculated by using nitrogen as standard and by comparing their absorption with that of nitrogen. Results will, however, be affected by the surface characteristics of the absorbent, such as unevennesses, micro-The authors have capillary structure and geometrical form. constructed apparatus for the determination of surface areas of powdered substances by means of gas absorption, the arrangement of which is shown. It consists of: mercury reservoir (ZR), gas buret (PB), manometer (RM), with calibrating scale (m), manometer calibrations $(z_1, z_2, z_3, z_4, z_5)$, sample container (V), thermostat (T) Card 1/6

Z/009/61/000/002/002/008

Apparatus for Determining Surface ... Ell2/E453

The dimensions vacuum and gas-delivery tubes and gas reservoir. of the apparatus permitted measuring surface areas greater than $0.5~\mathrm{m}^2$. Argon was used as absorbate. In order to determine the accuracy of the apparatus, the authors have attempted to analyse the different sources of errors which may affect the results and have taken as basis the Brunauer, Emmet and Teller equation for the volume of nitrogen, required to complete a unimolecular layer:

$$v_{\rm m} = \frac{v_{\rm h} (p_{\rm s} - p_{\rm l})}{p_{\rm l}} \left[\frac{1}{c} + \frac{(c - 1) p_{\rm l}}{c p_{\rm s}} \right]$$
 (1)

where $v_m = volume$ of unimolecular layer of absorbed gas

ps = saturation pressure of the adsorbate

 p_i = measured pressure of gas

c = constant

va = measured volume of adsorbed gas.

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Apparatus for Determining Surface ... E112/E453

The accuracy of the measurements can be fundamentally affected by: 1, impurities of apparatus and substances; 2, errors in calibration of volume V_b of the gas buret, 3, inaccuracy in measuring volume V_{mb} outside the buret area; 4, inaccuracy in measuring the free volume V_d of the sample; 5, inaccurate determinations of initial gas pressure p_0 ; saturation pressure p_s and measured pressure p_1 ; 6, insufficient control of thermostat. The authors have investigated how the different elements of error affect results and have taken as model substance the measuring of the surface area of a nickel catalyst, which amounted to $14 \text{ m}^2/\text{g}$ and where the other values were as follows $p_0 = 6.55 \text{ cm Hg}$; $p_1 = 3.27 \text{ cm Hg}$; $p_2 = 20.44 \text{ cm Hg}$. $v_0 = 72.54 \text{ cm}^3$; $v_{mb} = 3.6 \text{ cm}^3$. $v_{d} = 16.8 \text{ cm}^3$. $v_{b} = 17.7 \text{ cm}^3$ and $v_{c} = 42$. The changes in value of v_{m} (unimolecular layer) obtained for a relative change of v_{m} in the measured values $v_{c} = v_{c} = v$

Card 3/6

z/009/61/000/002/002/008

Apparatus for Determining Surface ... E112/E453

Value p₀ p₁ p₈ V_b V_{mb} V_d
Change +1.72% -1.04% +0.32% +0.4% +0.04% -0.22%

It is concluded that the mean error of $\|\mathbf{v}_m\|_{\mathrm{resulting}}$ from Inaccuracies in the calibration of the apparatus and faulty readings of the experimental values will not exceed 2%. (A mean error of 5% is quite acceptable for the reproducibility of The effects of impurities of mercury sample absorption work.) Impurities of the gas will not and apparatus were not determined. influence the results up to a concentration of 1% unless they take part in a chemical reaction. Maintaining constant temperature is of utmost importance but temperature stability of \pm 1 C will be Surface areas of samples of TiO2 of varying quantities sufficient: and volumes were measured to confirm the efficiency of the apparatus, Two samples of argon of different degree of purity were used pressures were read by naked eye, calibration of the apparatus and determination of volumes was conducted with an accuracy of 0.1 cm3 and thermostatting with \pm 0.2°C. Results of measurements were presented graphically showing reproducibility of the determinations Card 4/6

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Apparatus for Determining Surface ... Ell2/E453

with a limit of error of 4%, which was in complete agreement with theoretical considerations. The authors have determined the surface areas of more than 100 samples and claim perfect and simple functioning of the apparatus. Acknowledgments are expressed to Professor Doctor Eng. V.Danes, Eng. P.Jira, J.Novakova and to members of UFCH CSAV for advice and assistance and particularly to V.Růzička and J.Sanek. There are 3 figures, 2 tables and 2 references: 1 Czech and 1 non-Czech.

ASSOCIATION: Ustav fyzikální chemie ČSAV, Praha (Institute of Physical Chemistry, ČSAV)

SUBMITTED: March 5, 1959

Card 5/6

Z/009/61/000/007/003/004 E112/E135

AUTHORS: Dolejšek, Z., Grubner, O., Hala, E., Hanuš, V., and

Kossler, I.

TITLE: Contribution to the purification and analysis of

isoprene. II.

galaga, da, kanggab, kanggaba, ang

PERIODICAL: Chemický průmysl, 1961, No.7, pp. 361-363

TEXT: The production of polyisoprene requires the use of a monomer of highest purity. Distillation methods are suggested for the isolation of isoprene; it is stated that recovery processes will be successful if based on a thorough knowledge of vapor-liquid equilibrium data of the main components of technical isoprene. The present paper describes the determination of equilibrium data for mixtures of 2-methylbutene-1 (component 1), isoprene (component 2) and 2-methylbutene-2 (component 3). The above components were first purified and their mixtures then studied in a modified vapor-liquid equilibrium still, developed originally by D.T.C. Gillespie (Ref.2: Ind.Eng.Chem. A.E., 18, 575 (1946). A diagram of the apparatus is shown in Fig.1 and the experimental procedure is described. (A - inlet tube, C - Cottrell pump, Card 1/6

Z/009/61/000/007/003/004 E112/E135

Contribution to the purification and analysis of isoprene. II.

E - equilibrium chamber, CH - condenser, K, P - sample chambers, R - disengagement chamber, V - boiler). In operation, sample chambers K, P and boiler V are filled with a measured quantity of the hydrocarbon mixture and the boiling rate adjusted so as to maintain the steady pumping of liquid and vapour through the Cottrell tube. After allowing sufficient time of operation to ensure steady conditions within the apparatus, samples of the boiling liquid and condensed vapour are withdrawn from chambers K and P by means of a cooled syringe and collected in glass ampoules for analysis. Analytical data are tabulated which enable the calculation of the correlation between relative volatility and composition of the liquid phase. The equation for a binary system is as follows:

$$\mathbf{a}_{12} = \frac{\mathbf{y}_1}{\mathbf{x}_1} \frac{\mathbf{x}_2}{\mathbf{y}_2} = \frac{1 + 0.102 \, \mathbf{x}_2}{1 - 0.093 \, \mathbf{x}_1} \tag{1}$$

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Contribution to the purification and analysis of isoprene. II.

$$\mathbf{x}_{23} = \frac{\mathbf{y}_2}{\mathbf{x}_2} \frac{\mathbf{x}_3}{\mathbf{y}_3} = \frac{1 + 0.180 \times_3}{1 - 0.083 \times_2} \tag{3}$$

where: x₁, x₂, x₃ are molar fractions of components 1, 2 and 3 in the liquid phase; y₁, y₂, y₃ are molar fractions of components 1, 2 and 3 in the vapour phase; and a₁₂, a₁₃, a₂₃ the relative volatilities of the subscript components. Ternary systems follow

$$a_{13} = \frac{y_1}{x_1} \frac{x_3}{y_3} = \frac{1 + 0.410 \times_3 + 0.102 \times_2}{1 - 0.291 \times_1 - 0.083 \times_2}$$
(4)

volatilities of the subscript components.
the following equations:

$$a_{13} = \frac{y_1}{x_1} \frac{x_3}{y_3} = \frac{1 + 0.410 x_3 + 0.102 x_2}{1 - 0.291 x_1 - 0.083 x_2}$$

$$a_{23} = \frac{y_2}{x_2} \frac{x_3}{y_3} = \frac{1 + 0.180 x_3 - 0.093 x_1}{1 - 0.083 x_2 - 0.291 x_1}$$
(5)

The composition of the gaseous phase in equilibrium can be computed from the composition of the liquid phase by equations:

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(8)

Contribution to the purification and analysis of isoprene.

$$y_1 = \frac{a_{13} \frac{x_1}{x_3}}{1 + a_{13} \frac{x_1}{x_3} + a_{23} \frac{x_2}{x_3}}$$
 (6)

$$y_2 = \frac{a_{13} (x_2 / x_3)}{1 + a_{13} \frac{x_1}{x_3} + a_{23} \frac{x_2}{x_3}}$$
 (7)

The authors conclude from Eqs. (1) to (5) that binary or ternary azeotropes are absent from the system isoprene : 2-methylbutene-1 and 2-methylbutene-2, although this is in disagreement with the finding of M. Lecat (Ref.7; Ann. Soc. Sci. Bruxelles, 63, 58 (1949). The validity of the findings of the Czechoslovak authors was confirmed by practical distillation results, which will be utilized

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CIA-RDP86-00513R000617110014-0" APPROVED FOR RELEASE: 08/10/2001

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Contribution to the purification and analysis of isoprene. II.

for the study of the economics of industrial isoprene recovery for the production of synthetic rubber.

There are 1 figure (diagram of Cillognia approximation)

There are 1 figure (diagram of Gillespie apparatus), 2 tables (results of analyses) and 9 references: 6 Czech, 2 English and 1 French. The English language references read as follows: Ref.2: D.T.C. Gillespie, Ind.Eng.Chem. A.E., 18, 575 (1946). Ref.8: L.H. Horsley, Azeotropic data. Washington, 1954, No.7837.

ASSOCIATION: Ústav fyzikální chemie Československé akademie véd,

Praha

(Institute of Physical Chemistry, Czechoslovak AS,

Prague)

SUBMITTED: November 14, 1960

Card 5/6

Z/009/61/000/010/001/003 E112/E135

AUTHORS: Grubner, Otto, Rálek, Miloš, and Jirů, Pavel

TITLE: Preparation and properties of molecular sieves A

PERIODICAL: Chemický průmysl, No.10, 1961, pp.521-523

TEXT: Molecular sieves A are commercially not available in Czechoslovakia and the authors now describe laboratory methods for their preparation. Procedures are based on available literature. Compounds prepared were: Sieve 4 A (sodium-aluminosilicate), Sieve 5 A (calcium-aluminosilicate) and Sieve 3.8 A (potassium-sieve 5 A (calcium-aluminosilicate) and Sieve 3.8 A (potassium-aluminosilicate). The produced compounds were examined by the following methods.

1) X-ray powder photographs according to Debye—Scherrer.

2) Quantitative analysis (Al203 and Ca0 determined with Complexons).

3) Densities (determined by pycnometer with helium and mercury).

4) Absorption properties.

Examples of absorbed compounds are listed for each type of molecular sieve. Properties of the domestic and foreign materials were found to be identical. The authors have also undertaken the preparation and study of molecular sieves 10 X and 13 X, details of which will be published in a future paper.

Card 1/2

Z/009/61/000/010/001/003 E112/E135

Preparation and properties of Acknowledgments are expressed to Messrs. Svoboda, Kučera, Habesberger, Schurrer, Černy, Jakubičkova, Jirátora and Jiřičkova,

for their assistance. There are 1 table and 16 references: 6 Soviet-bloc and 10 non-Soviet-bloc. The four most recent English

language references read: Ref.2: R.M. Barrer. British Chem. Eng. 1 (1959).

Ref.4: R.M. Barrer, J.W. Baynham, F.W. Bultitude, W.M. Meier.

J. Chem. Soc. 195 (1959).

Ref.7: R.A. Labine, Chemical Engng 104 (1959).

Ref. 11: L. Broussard, D.P. Schoemaker. J. Am. Chem. Soc. Vol. 82, 1041 (1960).

ASSOCIATION: Ústav fyzikální chemie ČSAV, Praha

(Institute of Physical Chemistry, CSAV, Prague)

March 28, 1961 SUBMITTED:

Card 2/2

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

GRUBNER, O.; DUSKOVA, L.

Gas chromatography on adsorbed substances. Coll Cz Chem 26 no.12:3109-3115 D '61.

1. Institut fur physikalische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

JIRU, Pavel; GRUENER, Oto; RALEK, Milos

Preparation and properties of molecular type X sieves. Chem prum 12 no.7:355-357 Jl '62.

l. Ustav fyzikalni chemie, Ceskoslovenska akademie ved, Praha.

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S/081/62/000/024/020/073 B117/B186

AUTHORS:

Rálek, M., Yírů, P., Grubner, O., Beyer, H.

TITLE:

Molecular sieves with color indication of the humidity content

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 24, 1962, 150, abstract 24B1021 (Collect. Czechosl. Chem. Communs, v. 27, no. 1, 1962, 142-146 [Ger.; summary in Russ.])

TEXT: A study was made of a molecular sieve (MS) of the type Ag-A (MSI) which had been obtained by mixing a MS suspension of the type Na-A (MSII) with an 0.2 N AgNO solution at 25°C. In both MS the X-ray picture of the

MSI with 100% substitution of Na⁺ by Ag⁺ shows identical crystal lattices. It has been found by thermal differential analysis that at 235°C MSI separates the sorbed water. At 560°C a second exothermal region can be observed which is probably connected with the recrystallization in the MSII

lattice caused by the presence of Ag⁺. At 900°C a new endothermal region was obtained which is typical of MSI only. Under dynamic conditions, at

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5/081/62/000/024/020/073 B117/B196

Molecular sieves with ...

20°C, MSI like MSII adsorbs $\rm H_2O$, $\rm CO_2$, $\rm NH_3$, $\rm CH_3OH$, $\rm C_2H_5OH$ but does not. adsorb $\rm C_6H_6$, $\rm C_6H_{12}CHCl_3$ and $\rm C_2H_6CO$. The $\rm H_2O$ adsorption was measured also with a quartz-spiral balance at $\rm 20^{\circ}C$ under a water vapor pressure (p) of $\rm 5\cdot 10^{-3} - 5\cdot 10^{-1}$ mm Hg. The adsorption isotherms are similar for MSI with arbitrary $\rm Ag^+$ content. If the $\rm Ag^+$ content is increased its adsorptive power decreases. The originally yellow color of MSI of all compositions turns into a bright yellow at p 3 - 5·10⁻² mm Hg. At p 0.8 - 1 · 10⁻¹ mm Hg it turns pink and then grey white. At low p, MSI ca be used as color indicator. [Abstracter's note: Complete translation.]

Card 2/2

907/6246 PHASE I BOOK EXPLOITATION Soveshchaniye po tseolitam. 1st, Leningrad, 1961. Sinteticheskiye tseolity; polucheniye, issledovaniye i primeneniye (Synthetic Zeolites: Production, Investigation, and Use). Moscow, Izd-vo AN SSSR, 1962. 286 p. (Series: Its: Doklady) Errata slip inserted. 2500 copies printed. Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Komisiya po tseolitam. Resp. Eds.: M. M./Dubinin, Academician and V. V. Serpinskiy, Doctor of Chemical-Sciences; Ed.: Ye. G. Zhukovskaya; Tech. Ed.: S. P. Golub'. PURPOSE: This book is intended for scientists and engineers engaged in the production of Synthetic scolites (molecular sieves), and for chemists in general. Card 1/1 4

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Synthetic Zeolites: (Cont.)	sov/6246
COVERAGE: The book is a collection of report Conference on Zeolites, held in Leningrad at the Leningrad Technological Institute is purportedly the first monograph on this sugrouped into 3 subject areas: 1) theorem tion on various types of zeolites and metigation, 2) the production of zeolites, as zeolites. No personalities are mentioned dividual articles.	imeni Lensovet, and is ubject. The reports are tical problems of adsorp- hods for their investi- md 3) application of
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Synthetic Zeolites: (Cont.)	307/ 6246	0	
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DUSKOVA, L.; GRUENER, O.; HANUS, V.; KOSSLER, I.; MATYSKA, B.

Selection of extraction agents for isoprene rectification. Chem prum 13 no.10:513-516 O '63.

1. Ustav fyzikalni chemie, Coskoslovenska akademie ved, Praha.

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

GROBERA, C.; RUCERA, E.

Countercurrent gas-liquid chromatography. Goll Cz Chem 29 no.3: 722-729 hr '64.

1. Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague.

Kulkha, Z.; Granker, n.

Contribution to the theory of non-ideal separation processes using a one-dimensional model of separation columns. The other 29 no.8:1782-.789 Fg Tox.

1. Institute of Physical Chemistry, Czechoslovak Alademy of Briences, Prague.

CZECHOSLOVAKIA

GRUBNER, O.; RALEK, M.; ZIKANOVA, A.

Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 2, Feb 1966, pp 852-862.

"Calculation of the mass-transfer coefficients by means of a more exact theory of gas-solid chromatography. Part 1: comparison of columns charged with glass spheres and materials of high internal porosity."

CZECHOSLOVAKIA

SMOLKOVA, E; KRISTOPIKOVA, L; FELTL, L; GRUBNER, O

 Institute of Physical Chemistry, Csechoslovak Academy of Sciences, Prague (for Grubner);
 Institute of Analytical Chemistry, Charles University, Prague (for others)

Prague, Collection of Czechoslovak Chemical Communications, No 2, February 1966, pp 450-456

"Determination of the surface of powdery substances by the method of thermal desorption, using organic vapors as the sorbates."

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

CZECHOSLOVAKIA

Control of the Contro

GRUBNER, O; RALEK, M; KUCERA, E

Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague - (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 7, July 1966, pp 2629-2638

"Calculation of the mass transfer coefficients by means of a more exact theory of gas-solid chromatography. Part 2: Variance and asymmetry of the chromatographic curves in the system carbon dioxide-activated charcoal.

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

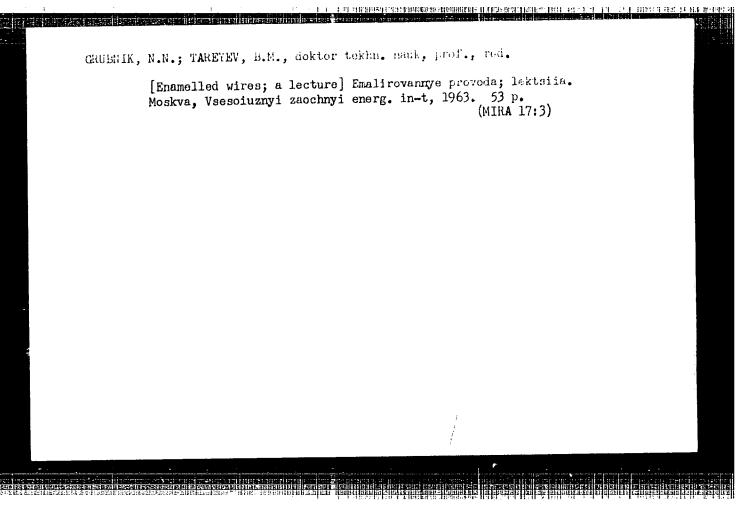
	Study of the acoustic properties of submerged ground at high sonic frequencies. Akust. zhur. 6 no.4:446-453 '60. (MIRA 13:12)					
	1. Akusticheskiy institut AN SSS (Sound-Transmission)	R, Moskva. (Underwater acoustic)				
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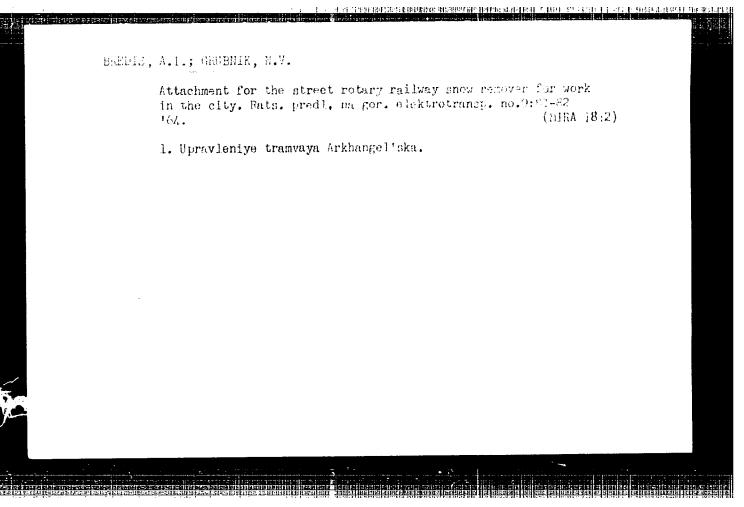
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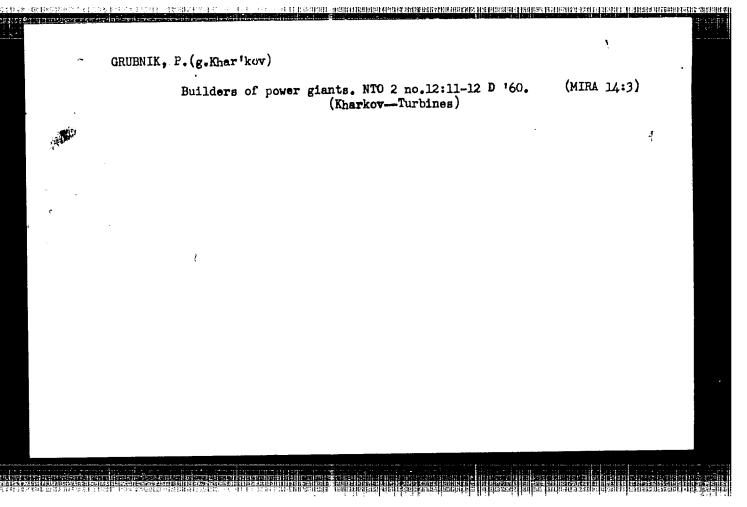
GRUBNIK, N.N.; LERNER, M.M.; YAMANGWA, L.V.

Review of V.T.Renne's book "Electric condensers." Elektrichestvo (MIRA 14:4)

(Electric capacitors) (Renne, V.T.)







BORISOV, Vladimir Mikhaylovich, stalevar; GRUBNIK, P.D., red.;
LIMANOVA, M.I., tekhn. red.

[A matter of worker's honor] Delo rabochei chesti. Khar'kov,
Khar'kovskoe knizhnoe izd-vo, 1962. 19 p. (MIRA 16:6)

1. Khar'kovskiy traktornyy zavod im. Ordzhonikidze, rukovoditel' brigady kommunisticheskogo truda im. XXII s"ezda KFSS
(for Borisov). (Kharkov—Tractor industry)
(Efficiency, Industrial)

GOL'DFARB, Lev Grigor'yevich; POPOV, Ivan Denisovich; GEUENIK, P.D., red.; LIMANOVA, M.I., tekhn. red.

[Modernization of equipment and increasing labor productivity; from the work practice of the machinery industry of the Kharkov Economic Administrative Region] Modernizateiia oborudovaniia i povyshenie proizvoditel'nosti truda; iz opyta raboty mashinostroitel'noi promyshlennosti Khar'kovskogo ekonomicheskogo administrativnogo raiona. Khar'kov, Khar'kovskoe knizhnoe izdvo, 1962. 66 p.

(MIRA 16:7)
(Kharkov Economic Region—Machinery industry—Technological innovations)

GRUBNIK, V.M.; GRUBNIK, T.V.

Reinfusion of blood in ectopic pregnancy at a rural district hospital. Akush. i gin. 35 no.1:102 Ja-F '59. (MIRA 12:2)

1. Is bol'nitsy Kominternovskogo rayona Odesskoy oblasti.
(BLOOD TRANSFUSION, re-infusion of blood in ectopic pregn. (Rus) (FREMANCY, ECTOPIC, ther. re-infusion of blood (Rus))

主新国民主席的基本的基础的**经**价值特别的基础目标的基础的工程中的工程的发现,并是自己工程的基础的基础的工程和。

GRUBNIK, V.M.; GRUBNIK, T.V.

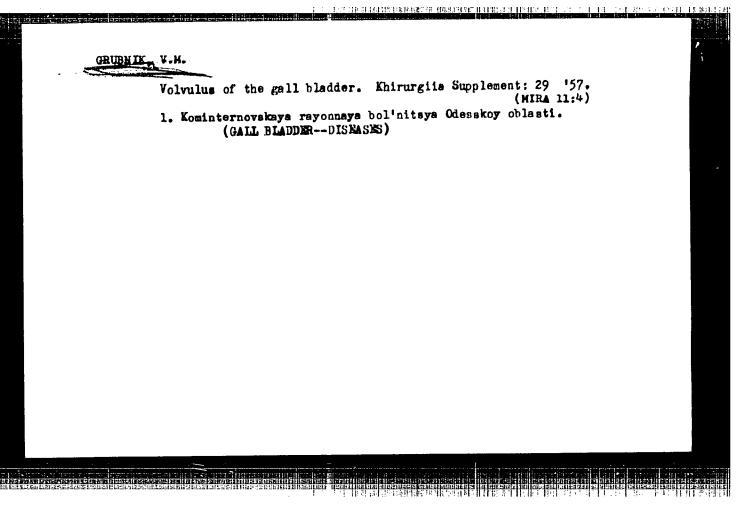
Torsion of a myomatous uterus in two patients diagnosed preoperatively. Akush.i gin. no.5:119-120 '61. (MIRA 15:1)

1. Zaveduyushchiy khirurgicheskim otdeleniyem Kominternovskoy rayonnoy bol'nitsy Odesskoy oblasti (fur V.M. Grubnik). 2. Zaveduyushchiy ginekologicheskim otdeleniyem Komiternovskoy rayonnoy bol'nitsy Odesskoy oblasti (for T.V. Grubnik). (UTERUS--TUMORS)

GRUBNIK, V.M.; GRUBNIK, T.V.

Experience in potentiated ether-rygen anesthesia during obstetric and gynecological operations in a rural district hospital. Akush. i gin. 40 no.5x151-152 S-0 '64. (MIRA 1815)

1. Komiternovskaya rayonnaya bol'nitsa Odesskoy oblasti.



GRUBNIK, V.M.

Tubal pregnancy in strangulated inguinal hernia, Akush, i gin. 33 no.1:98 Ja-F '57 (MIRA 10:4)

1. Iz Kominternovskoy rayonnoy bol'nitsy Odesskoy oblasti (glavnyy vrach A.I. Monshayn)
(HERNIA) (PREGNANCY, EXTRAUTERINE)

GRUENIK, V.M.

Treatment of cholecystitis in a rural district hospital. Enirurgita,

Moskva 34 no.11:113-114 N '58. (NIRA 12:1)

1. Iz khirurgicheskogo otdeleniya Kominternovskoy rayonnoy bol'nitsy

Odesskoy o'blasti.

(CHOLECTRITE, ther.

in rural district hosp. in Russia (Rus))

GRUBNIK, V.M.

Resection of the stomach following perforating gastric and duodenal ulcers in the rural hospital. Nov. khir. arkh. no.2:133 Mr-Ap '59.

(MIRA 12:7)

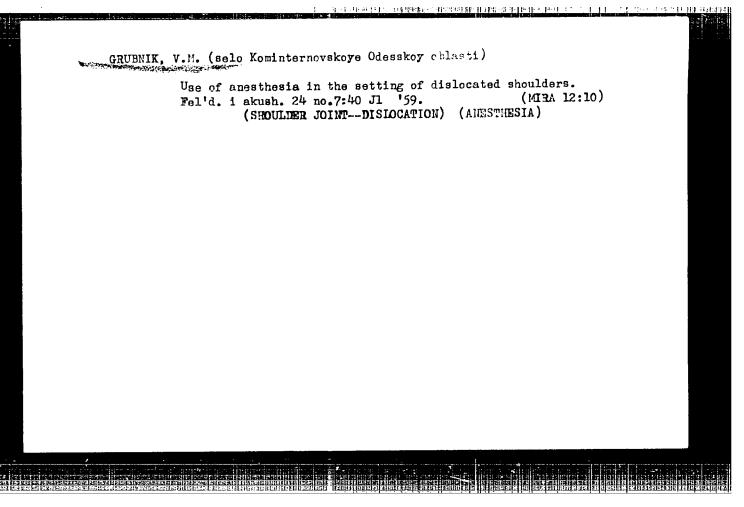
1. Khirurgicheskoye otdeleniye Kominternovskoy rayonnoy bolinitsy, Odesskoy obl.

(STOMACH--SURGERY) (PEPTIC ULCER)

GRUBNIK, V.M.

Treatment of peptic ulcer of the stomach and duodenum with a mixture of drugs. Vrach.delo no.10:1095 0 59. (MIRA 13:2)

1. Rayonnaya bol'nitsa Kominternovskogo rayona Odesskoy oblasti.
(PEPTIC UICKR)



GRUBNIK, V.M.; GRUBNIK, T.V.

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Torsion of a myomatous uterus in two patients diagnosed preoperatively. Akush.i gin. no.5:119-120 '61. (MIRA 15:1)

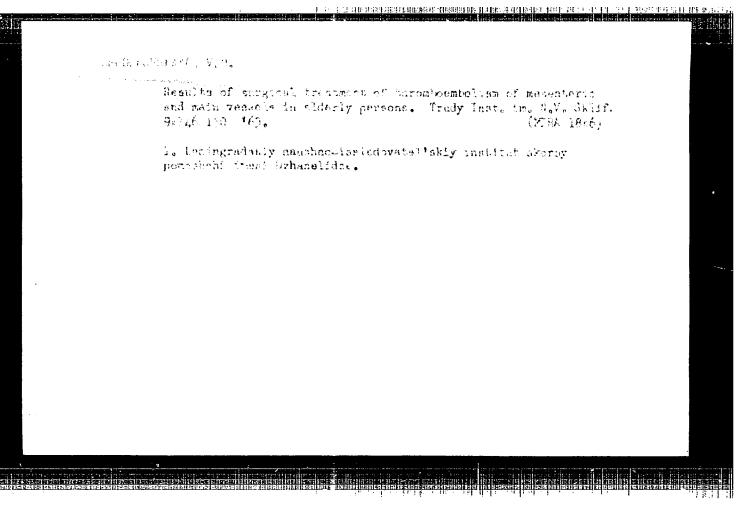
1. Zaveduyushchiy khirurgicheskim otdeleniyem Kominternovskoy rayonnoy bol'nitsy Odesskoy oblasti (fur V.M. Grubnik). 2. Zaveduyushchiy ginekologicheskim otdeleniyem Komiternovskoy rayonnoy bol'nitsy Odesskoy oblasti (for T.V. Grubnik). (UTERUS-TUMORS)

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

CRUBNIK, V.M.; CRUBNIK, T.V.

Experience in potentiated ether-raygen anesthesia during obstetric and gynecological operations in a rural district hospital. Akush. i gin. 40 no.5;151-152 S-0 '64. (MIRA 18:5)

1. Komiternovskaya rayonnaya bol'nitsa Odesskoy oblasti.



APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

ACCESSION NR: AT4043275

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AUTHOR: Vol'f, M. B., Grudnikov, I. B., Prokopyuk, L. G., Plan, M. A., Tukov, G.V.

TITLE: Removal of carbon dioxide and sulfur compounds from ethylene by means of synthetic zeolites

SOURCE: Ufa. Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti. Trudy*, no. 7, 1964. Sernisty*ye nefti i produkty* ikh pererabotki (Sour crude oil and products of refining), 83-94

TOPIC TAGS: zeolite, carbon dioxide, ethylene, sulfur synthetic zeolite, adsorption column, acetylene, ethylene purification, molecular sieve

ABSTRACT: An investigation of different molecular sieves made at the Gor'kovskaya eksperimental'naya baza (Gor'kiy Experimental Plant) of the VNII NP for the removal of carbon dioxide from ethylene by adsorption showed that the most effective zeolite samples were of the type CaA, NaA being less effective and CaX and NaX being unsuitable for the purification. Using CaA zeolite, optimal results were obtained at a volumetric rate of 1200-9000 liter/liter per hour (linear rate of 0.008-0.05 m/sec. A decrease in temperature from 36 to 3C improved the adsorption properties of CaA zeolite with respect to carbon dioxide. Adsorption on zeolite CaA in one cycle at 22 atm. and 3C, at a rate of

ACCESSION NR: AT4043275

1200-9000 hr. 1, decreased the carbon dioxide content from 0.02-0.04% to 0.001%. In order to decrease the amount of sulfur compounds from 1-8 to 0.5 mg/mm³, up to 30,000 liters of ethylene can be processed with 1 liter of zeolite in one cycle of adsorption. The operation of the adsorption column is shown schematically. The influence of the particle size of the zeolite on the degree of purification was also investigated. Comparison of the results of adsorption with ordinary granules and with adsorbents ground to 1-2 mm showed that the ground zeolite is much more effective than the granulated one. The sulfur content of ethylene before and after purification with zeolites is shown in a table. The desorption of the gases adsorbed on zeolites, including ethylene, can be accomplished by bubbling through a methane-hydrogen mixture at atmospheric pressure and 240-300C, using a mixture of 600-800 liters per liter of zeolite. After desorption, the molecular sieves regain their adsorptive properties. The use of zeolites for removing impurities from ethylene makes it possible to reject the use of aklaline purification completely and to obtain ethylene of a higher degree of purity. The adsorption of acetylene from ethylene before its hydrogenation does not give a sufficiently high degree of separation; hence it cannot be recommended for industrial use. Orig. art. has: 8 figures, 2 tables and 1 chemical equation.

Card 2/3

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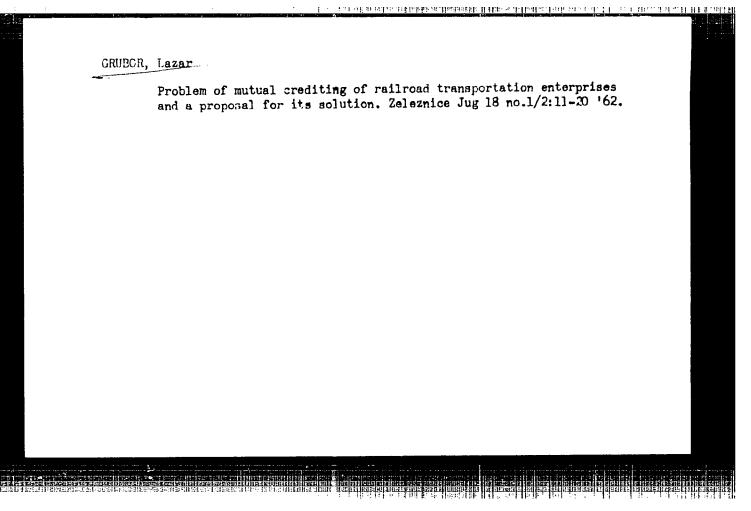
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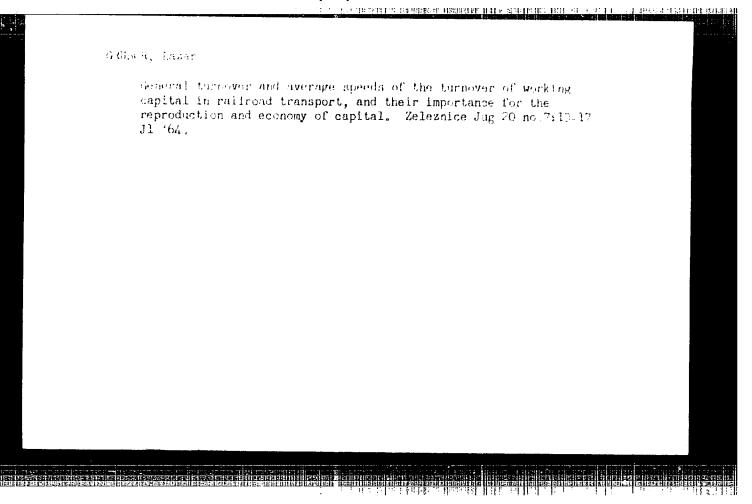
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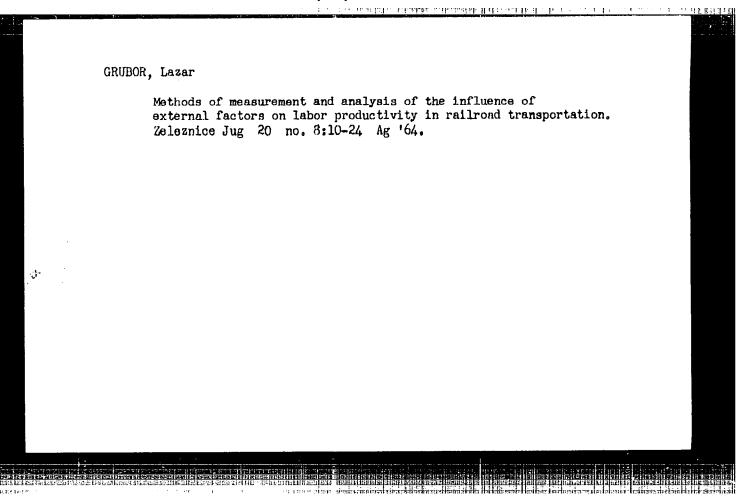
GRUBNIKOV, N. V., Cand. in Tech. Sci.

"External Devices of Automatic High Speed Digital Computing Machines" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56







PHASE I BOOK EXPLOITATION

YUG/5509

Grubor, Ljubo, pub.

Atomska biološka hemiska oružja i zaštita; zbirka članaka (Atomic, Biological, and Chemical Weapons and Protection Against Them; Collection of Articles) Zagreb, EPOHA, 1960. 426 p. No. of copies printed not given.

Authors of articles: Pavle Savić, Academician, Milorad Ristić, Engineer, Milorad Mladenović, Doctor, Nenad Raišić, Engineer, Milovan Vidmar, Engineer, Dragutin Milhofer, Engineer, Srdan Hajduković, Doctor, Velimir Vouk, Doctor, Adam Miljković, Doctor, Čedomil Šebetić, Doctor, Milivoje Perišić, Doctor, Svetolik Rašić, Engineer, Miljko Đurić, Engineer and Kazimir Baryla, Doctor.

FURPOSE: This collection of articles is intended for the general reader as well as for personnel in scientific research and similar organizations.

COVERAGE: The book contains 16 articles dealing with general problems of atomic, biological, and chemical warfare weapons and defense methods. The following topics are discussed: nuclear power, reactors, nuclear explosions [including their peaceful application], nuclear weapons, radiological detection and dosimetry, some problems of the effect of nuclear radiation on the organism and of internal Card 1/4

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

contamination by radioactive isotopes, problems of germ and chemical warfare, and the use of combat poisons. The Foreword was written by Major General Rade Bulat. References follow most of the articles.

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Atomic, Biological, and Chemical Weapons (Cont.)

Baryla, Kazimir, Doctor. Medical Aspects of the Use of Modern

411

* [Djuric and Duric are spelling variations; both forms are found in the book]

AVAILABLE: Library of Congress (UF767.A8)

Card 4/4

AC/dwm/mas 9-14-61

FEYMAN, I.I., kand.tekhn.nauk; GRUROY, A.F., GAGGROCHKINA, M.K., studentka;
MYASHIKOVA, N.V., studentka

Choosing outimum weft twists for burlap fabrics. Tekst.prom. 18
no.5:70-71 My '58.

1. Glavnyy inshener Marvskoy l'no-dzhutovoy fabriki (for Grubov).
2. Kostromskoy tekstil'nyy institut (for Gagarochkina, Myasnikova).

(Burlap)

Grubov, P.V. AUTHOR:

104-2-25/38

and the control of the model of the model of the first of the first of the model of the magnetic field of the first of the

TITIE:

The struggle against dustiness in the fuel supply of a

heat and electric power station. (Borba s zapylennost'yu

toplivopodachi TETs)

"Elektricheskie Stantsii" (Power Stations) 1957, PERIODICAL:

Vol. 28, No. 2, pp. 84 - 85 (U.S.S.R.)

ABSTRACT: Much of the dust in power stations comes from conveyor transfer points which are not always properly designed so as to cut down the amount of dust to a minimum. This stort note describes steps that were taken at a peat burning power station to improve matters. Different arrangements of transfer points, including hermetic sealing are illustrated by sketches. The dust extracting installation was improved.

There are 5 figures.

AVAILABLE:

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GRUBOV, V.I. [Hrubov, V.I.]

Investigation of the operating conditions of a carbonization column conducted with the aid of the "Ural-1" electronic computer. Khim. prom. [Ukr.] no.2:52-56 Ap-Je '63.

Electronic computers in the chemical and petroleum refining industry. Thid.:82-84 (MIRA 16:8)

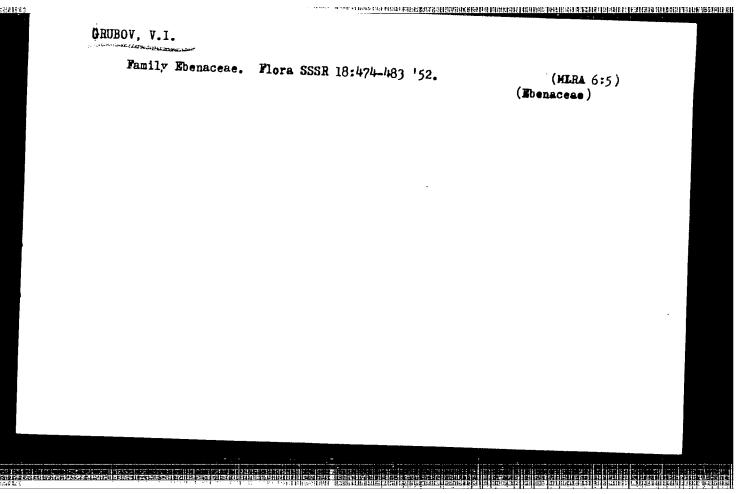
1. Vychislitel'nyy tsentr Kiyevskogo gosudarstvennogo universiteta.

GRUBOV, V.I. [Hrubov, V.I.] (Kiyev)

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

"Another species of the Genus Rhamnus L.S. Str," Bot. mat. Gerb., 14, 1951
(Buckthorn)

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- 1. GRUBOV, V. I.; YUNATOV, A. A.
- 2. USSR (600)
- 4. Zoology Georgraphical Distribution
- 7. Basic peculiarities of the flora in the Mongolian Republic and its geographical distribution. Bot. zhur. 37 No. 1, 1952. Botanicheskiy Institut im. V. L. Komarova Akademii Nauk SSSR Leningrad
 Red. 20 July 1951

9a. Monthly List of Russian Accessions. Library of Congress, April 1952.

GRUBOV, V.I.

Plant and geobotanical districting of the Mongolian People's Republic, Vop.geog. no.35:172-201 '54. (MIRA 7:12)

(Mongelia--Phytegeography)

GRUBOV, V.I.; DOROFEYEV, P.I.

Afrikan Nikolaevich Kriehtofovich (1885-1953). Bet.zhur. 39 no.2:
305-312 Nr-4p *54.

(Kriehtofovich, Afrikan Nikolaevich, 1885-1953)

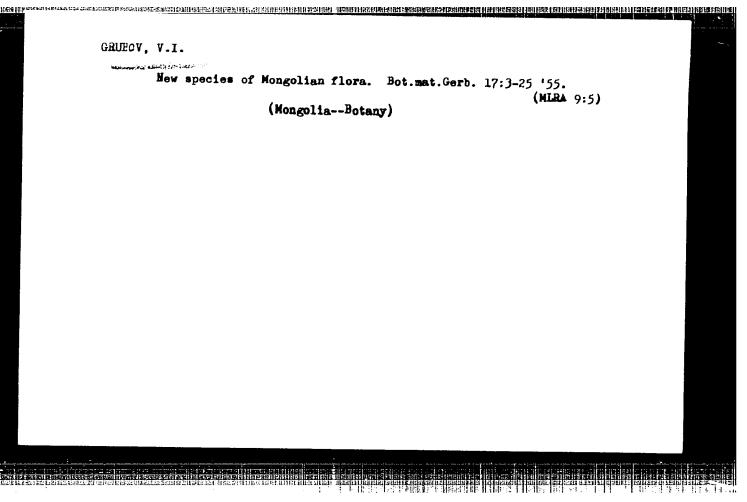
(Kriehtofovich, Afrikan Nikolaevich, 1885-1953)

CRUEOV, V. I.

BAYKOVSKAYA, T.N.; GHUBOV, V.I.

P.A. Mchedlishvill's criticism of A.E.Krishtofovich. Bot.shur. 39
no.3:459-464 My-Je '54. (MURA 7:7)

1. Botanicheskiy institut im. V.L.Komarova, Akademii namk SSSE,
Leningrad. (Paleontology) (Mchedlishvili, P.A.) (Krishtofovich, A.E.)



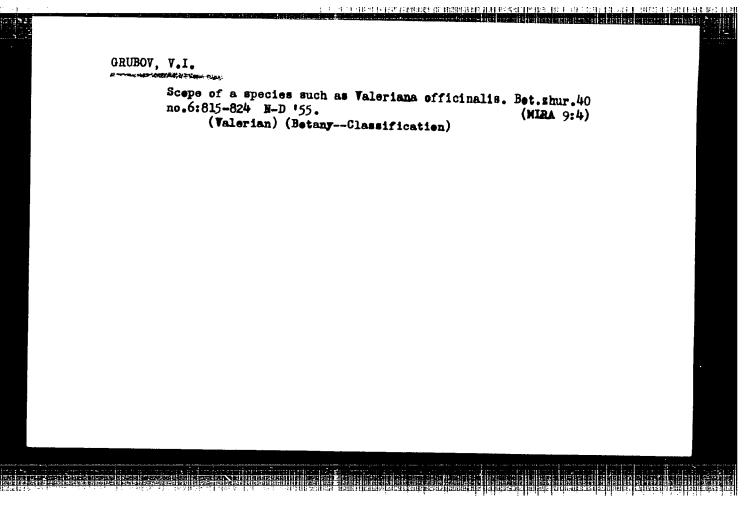
GRUBOV, V.I.

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Publication data en volumes 1 and 2 of the "Catalog of plants" by Martin Vahl. Bet.shur.40 ne.5:747-748 S-0 '55. (MLRA 9:4)

1. Betanicheskiy institut imeni V.L. Komarova Akademii nauk SSSR, Leningrad.

(Betany--Catalegs and collections)



रक्षा एक र संस्थान में किस में किस से माल के स्थाप के स

GRUBOV, V. I.; NEMCHINOV, V.S., akademik, glavnyy redaktor; LAVRENKO, Ye.M., redaktor; SHUL'ZHENKO, I.F., redaktor; LIPSHITS, S. Yu., redaktor; PEVZNER, R.S., tekhnicheskiy redaktor.

Compendium of flora of the Mongolian People's Republic. Trudy Mong. kom. no.67:3-307 '55. (MLRA 8:6)

1. Chlen-korrespondent Akademii nauk SSSR (for Lavrenko).
(Mongolia--Botany)

KRISHTOFOVICH, A.N. [deceased]; PALABIN, I.V. [deceased]; SHAPARENKO,

K.K. [deceased]; YARMOLENKO, A.V. [deceased]; BAYKOVSKAYA, T.N.;

GRUBOV, V.I.; IL'INSKAYA, I.A.; SHISHKIN, B.K., redaktor;

SHCHEBINA, T.S., redaktor; KIRNARSKAYA, A.A., tekhnicheskiy

redaktor.

[Oligocene flora of Mount Ashutas in Kazakhstan] Oligotsenovaia flora gory Ashutas v Kazakhstane. Moskva, Izd-vo Akademii nauk SSSR, 1956, 178 p. (Akademiia nauk SSSR. Botanicheskii institut. Trudy, Ser. 8, no.1. Paleobotanika). (MLRA 9:8)

1. Chlen-korrespondent AN SSSR (for Krishtofovich, Shishkin) (Kazakhstan--Paleobotany)

GRUBOV, V.I.

The nature of our regional flora ("Flora of the Kirghiz S.S.R. Guide to plants of the Kirghiz S.S.R." Reviewed by V.I. Grubov. Bot.zhur. 41 no.3:421-427 Mr '56. (MLRA 9:8)

1. Botanicheskiy institut imeni V.L. Komarova Akademii nauk SSSR, Leningrad. (Kirghizistan--Botany)

The early return the company of the expension particles

FOOUNTEY! 0838 MURCORY : Cultivated Flants - Subtropical, Prophesi. 1995. in 1998 95., 45.44, 19**58**, 19463966 经基础 : irubov, T. 1. 12.32. : Botanical Institute, AS USSK * II IL : Exotic Plants of Zakarpat'ye as Indicators of Climate. 10510. PMB. : Tr. Botan. In-ta AN USBI, 1957, ser. 3, 7yp. 11, 399-347 -: Abost AO species of exotic plants cultivisti in Artapatakaya oblast of ikrainian Sul are divided into I groups ascording to their dright Mediterranean, North American and Japaness-Chinese. The successful cultivation of the most warmth-loving exotice in Cakarpateknya colest' gives a basis for the recommendation of the outtrystion of tea in the foothill zone of Uzhgorod-Caustasiy ridge. For the sold resistant varieties of tex, reised in the more northern regions of Soviet Union, regions of Pritisakaya lowland and the southern shopes of Usbgorod-manasakiy ridge will be probably suitable. -- M. K. Deulina Car: 1/1

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000617110014-0"

Was K. Fraas the precursor of creative Darwinism? (Concerning I.A. Khalifman's article in "Agrobiologiia"). Bot.zhur. 42 no.3:488-493 Mr '57. (MLRA 10:5)

1. Botanicheskiy institut im. V.L. Komarova Akademii nauk SSSR, Leningrad.

(Fraas, Karl Nikolaus, 1810-1875) (Species, Origin of) (Khalifman, I.A.)

GRUBOV, v.1.

"Natural plant families" [in German]. Vol.20d. Reviewed by V.I.Grubov.

Bot.zhur. 42 no.10:1523-1527 0 '57. (MIRA 10:10)

1. Botanicheskiy institut im.V.L.Komarova AN SSSR, Leningrad.

(Buckthorn)

KOMAROV, V.L., akademik, glavnyy red.; SHISHKIN, B.K., red. izdaniya;
BOBROV, Ye.G., doktor biol.nauk, prof.red.; VASIL'CHENKO, I.T.,
red.; GORSHKOVA, S.G., red.; GRIGOR'TEV, Yu.S., red.; GHEBOT, Y.I.,
red.; DOROFETEV, P.I., red.; LINDKAYA, I.A., red.; KIDKOV, M.V.,
red.; KUPRIYANOVA, L.A., red.; LINDHEWSKIY, I.A., red.; MOVOPOKROVSKIY, I.V., red.; POBEDIMOVA, Ye.G., red.; POPOV, M.G., red.;
POYARKOVA, A.I., red.; SHTETNBERG, Ye.I., red.; TSVELEV, M.M., red.;
SMIRNOVA, A.V., tekhn.red.

[Flora of the U.S.S.R.] Flora SSSR, Moskva, Izd-vo Akad. nauk
SSSR, 1958. 775 p. (MIRA 12:7)

1. Chlen-korrespondent AN SSSR (for Shishkin).

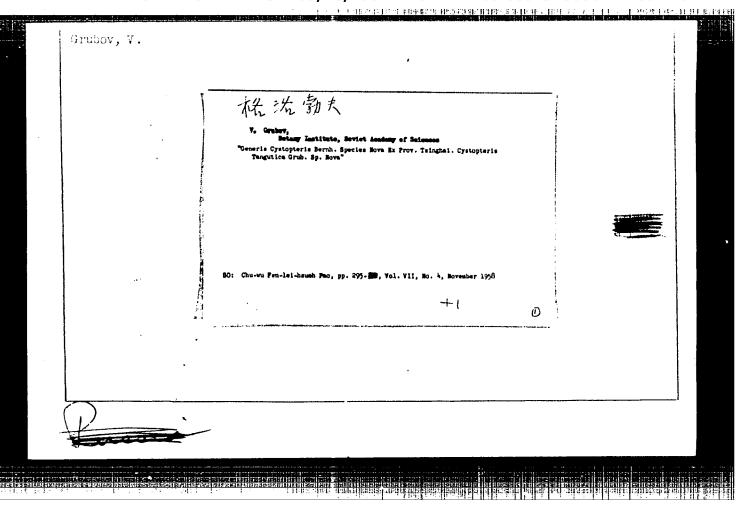
(Botany)

ARTYUSHENKO, Z.T.; VASIL'YEV, I.V.; GZYRYAN, M.S.; GOLOVACH, A.G.; GHUBOV, V.I.; ZAMYATNIN, B.N.; PIDOTTI, O.A.; PILIPENKO, F.S.; POLETIKO, O.M., kand.biolog.mauk; RODIONENKO, G.I.; RUSANOV, F.N.; SAAKOV, S.G.; SOKOLOV, S.Ya., prof., doktor biolog.mauk, red.; FEDOROV, A1.A.; SHIPCHINSKIY, N.V. [deceased]; SHUL'GINA, V.V.; SHUKHOBODSKIY, B.A.; GOLOVNIN, M.I., red. isd-va; KRUGLIKOVA, N.A., tekhn.red.

[Trees and shrubs of the U.S.S.R.; wild, cultivated, and promising exotic trees and shrubs] Derev'ia i kustarniki SSSR; dikorastushchie, kul'tiviruemye i perspektivnye dlia introduktsii. Moskva. [Vol.4. Angiosperms: Leguminosae - Punicaceae] Pokrytosemennye: Semeistva bobovye-granatovye. 1958. 973 p. (MIRA 11:12)

1. AN SSSR. Botanicheskiy institut.
(Angiosperms) (Trees) (Shrubs)

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BORISOVA, A.G.; BOCHANTSKY, V.P.; VASIL'CHENKO, I.T.; GOLUBKOVA, V.F.; GORSHKOVA, S.G.; GRUBOV, V.I.; KIRPICHNIKOV, M.E.; SMOL'YANINOVA, L.A.; TAMAMSHYAN, S.G.; TEVELEV, N.N.; TSVETKOVA, L.I.; YUZEP-CHUK, S.V.; SHISHKIN, B.K., red.toma; BOBROV, Ye.G., doktor biol.nauk, prof., red.: SMIRNOVA, A.V., tekhn.red.

[Compositae] Compositae. Moskva, Izd.-vo Akad.nauk SSSR. 1959. 630 p.(Akademiia nauk SSSR. Botanicheskii institut. Flora SSSR. no.25) (MIRA 13:4)

(Compositae)

BOBROV, Ye.G., doktor biol.nauk, prof.; VASIL'CHENKO, I.T.; GORSHKOVA,
S.G.; GRIGGR'TEV, Yu.S.; GRIBOV, V.I.; DOROFSTEV, P.I.; LI'INSKAYA,
I.A.; KLOKOV, M.V.; KUPRITAROVA, L.A.; LINCHEVSKIY, I.A.;
NOVOFORROYSKIY, I.V.; FOBEDIMOVA, Ye.G.; POPOV, M.G.; FOTARKOVA,
A.I.; SHTETNHERG, Ye.I.; TSVELEV, N.N.; SHISHKIN, B.K., red.
izdaniya; SMIRNOVA,, A.V., tekhn.red.

[Dicotyledons] Dicotyledons. Moskva, Izd-vo Åkad.nauk SSSR, 1959.
775 p. (Akademiia nauk SSSR, Botanicheskii institut. Flora SSSR,
vol.23)

(Dicotyledons)

BORISOVA, A.G.; BOCHANTSEV, V.P.; VASIL'CHENKO, I.T.; GOLUBKOVA, V.P.;

GORSHKOVA, S.G.; GRUBOV, V.I.; KIRPICHNIKOV, M.E.; SMOL'TANINOVA, L.A.;

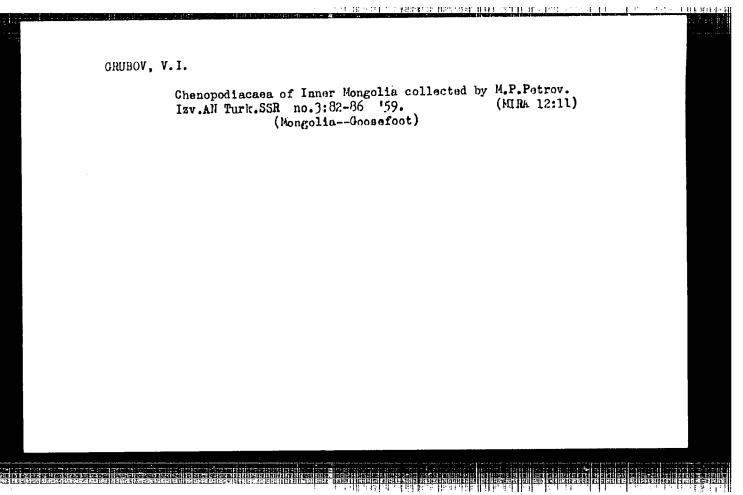
TAMAMSHYAN, S.G.; TSVELLY, M.N.; YUZEPCHUK, S.V.; KOMAROV, V.L.,

akædemik, glavnyy red.; SHISHKIN, B.K., red.izdaniya; BOBROV, Ye.G.,

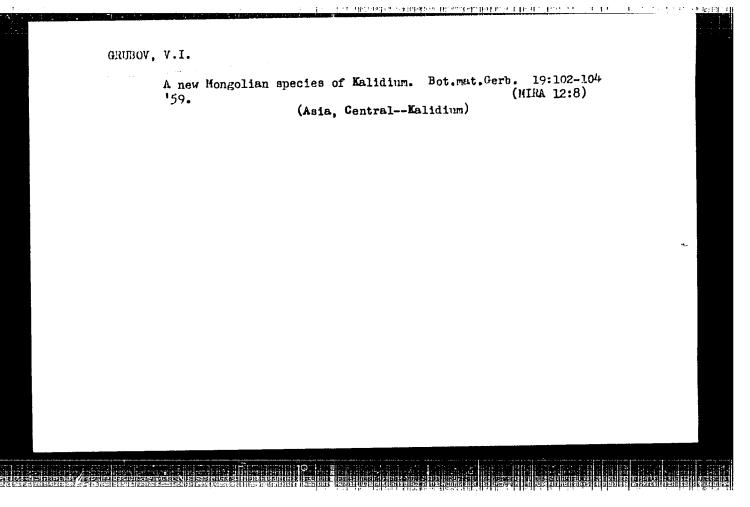
doktor biol.nauk, prof., red.; SMIRNOV, A.V., tekhn.red.

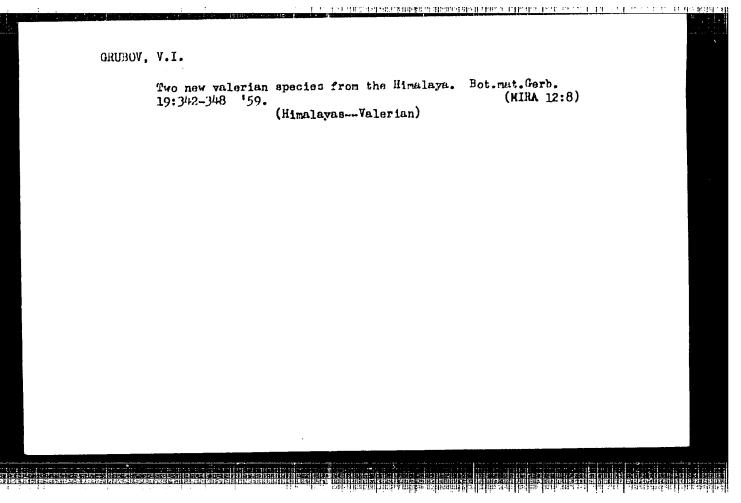
[Flora of the U.S.S.R.] Flora SSSR. Moskva, Ind-vo Akad.nauk SSSR. 1959. 630 p. (MIRA 12:8)

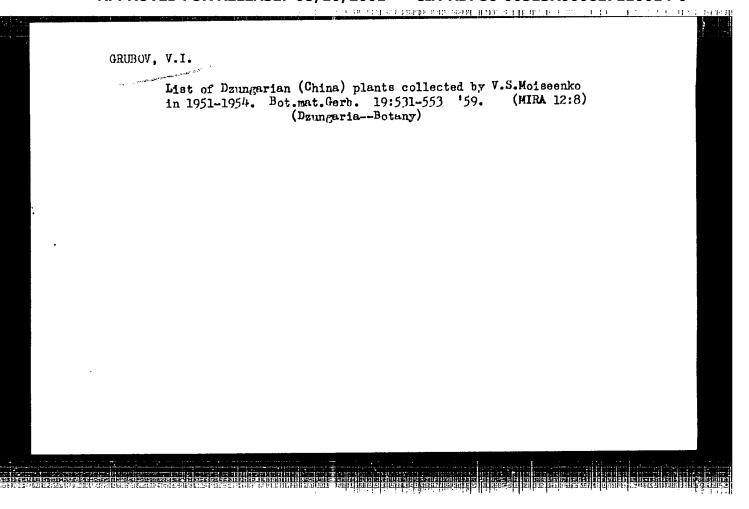
1. Chlen-korrespondent AN SSSR (for Shishkin). (Compositae)



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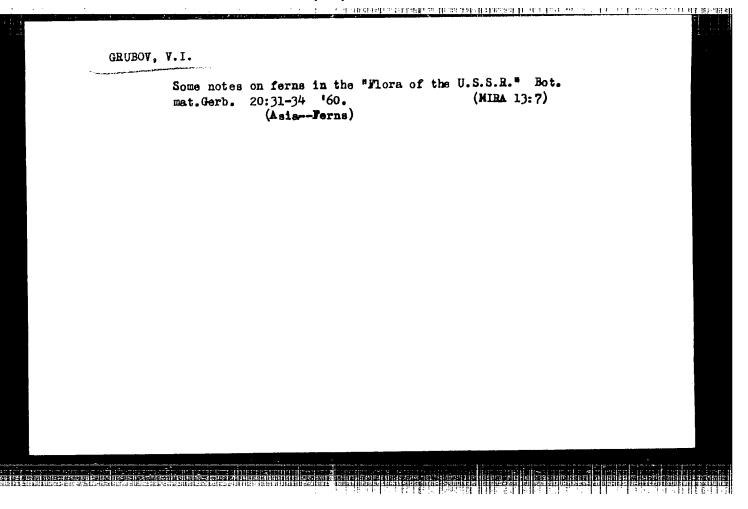


GOLOVACH, A.G.; GRUBOV, V.I.; ZAMYATNIN, B.N.; LINCHEVSKIY, I.A.; PETYAYEV, S.I.; PIDOTTI, O.A.; PILIPENKO, F.S.; POLETIKO, O.M.: RODIONENKO, G.I.; SAAKOV, S.G.; SELIVANOVA-GORODKOVA, Ye.A.; SOKOLOV, S.Ya., prof., doktor biolog.nauk; SHIPCHINSKIY, N.V. [doceased]; BELKINA, M.A., red.izd-va; HLEYKH, E.Yu., tekhn.red.

[Trees and shrubs of the U.S.S.R.; wild and cultivated species and plants considered for prospective introduction] Derevia i kustarniki SSSR; dikorastushchie, kul'tiviruemye i perspektivnye dlie introduktsii. Moskve, Vol.5. [Angiosperms: myrtle and olive families] Pokrytosemennye: Semeistva mirtovye-maslinovye. 1960. 543 p. (MIRA 13:12)

1. Akademiya nauk SSSR. Botanicheskiy institut.
(Myrtle) (Olive) (Plant introduction)

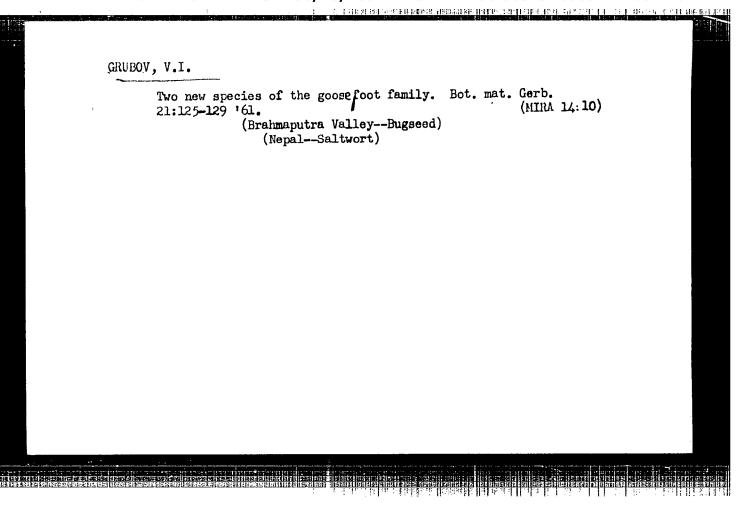
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(4) 大型工程的工程可以及各种条件程序的不同的的逻辑与目标的工程中的工程的工程或是工程的工程。如果工程工程中可以其他。

GRUBOV, V. I.

Doc Biol Sci - (diss) "Central Asia in botanico-geographic relations. Generalizing report on studies presented in competition..." Leningrad, 1961. 22 pp; (Academy of Sciences Uzbek SSR, Joint Academic Council of the Division of Biological Sciences); 200 copies; free; (KL, 7-61 sup, 226)



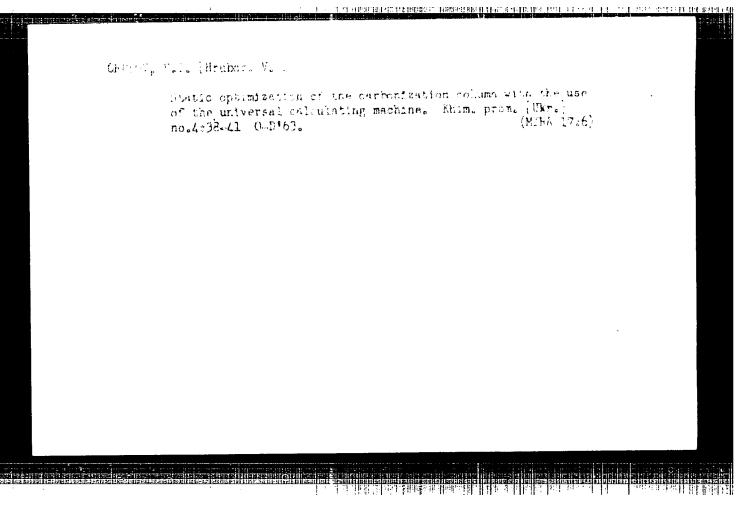
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्र महाराज्य स्थान स्वरंभा द्वाराम अध्यक्षात्र (चारा प्रमाणका वा प्राप्त प्राप्त करान का प्राप्त करान का प्राप्त

CRUBOV, V.1.; VABILICHEMEC, I.T., red.; LINCHEVERTY, I.A., red.; LIPSHITS, S.Yu., red.; LEBEDEV, D.V., red.

[Plants of Central Asia; according to materials of the V.L. Komarov Botanical Institute] Rasteniia TSentralinci Azi; po materialam Botanicheskogo Instituta im. V.L.Komarov. Sost. V.I.Grubov. Moskva, Izd-vo AN SOSA. No.1. [Freface. Ferns. Bibliography] Vvedenie, Paporotniki. Bibliografiia. 1963. 165 p. (Pl.G. 17:8)

1. Akademiya nauk SSSR. Botanicheskiy institut.



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